

# Montgomery County Hazard Mitigation



*Montgomery County Hazard Mitigation Plan Revision 2017*

# Hazard Mitigation Plan Requirements

- Disaster Mitigation Act passed in 2000
- Requires plan adoption by all municipalities
- Plans linked to future funding
- Plans must be updated each 5 years- Deadline for update is 1/17/18.

# Roles and Responsibilities

- All 62 Municipalities
- Pennsylvania Emergency Management Agency (PEMA)
- Federal Emergency Management Agency (FEMA)
- Montgomery County Public Safety Department
- Montgomery County Planning Commission

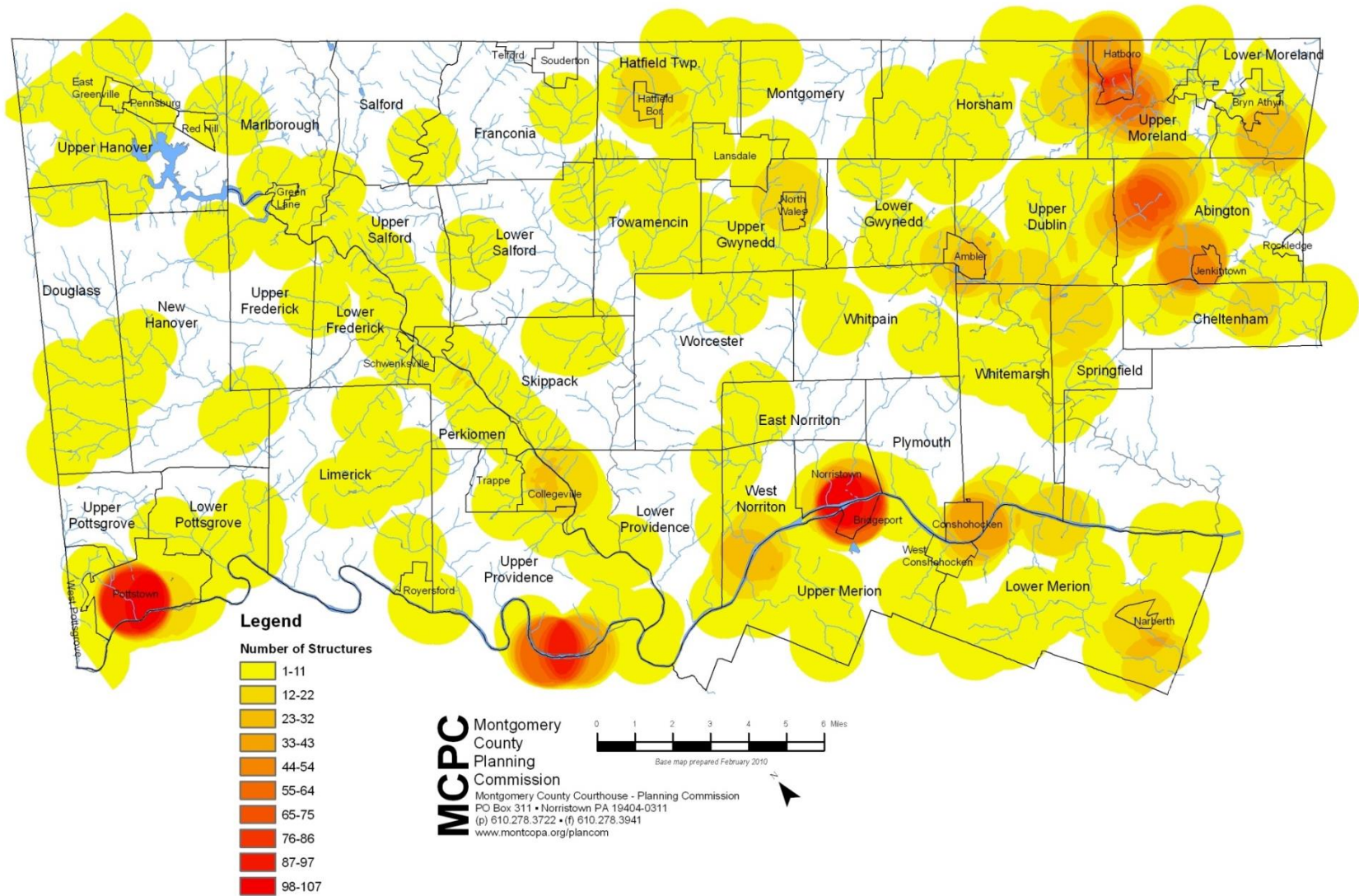
# Local Mitigation Plan Contents

- Introduction
- Overview of Montgomery County
- Hazard Mitigation and Risk
- Capability Assessment
- Mitigation Action Plan
- Public Involvement
- Appendix

# Flooding

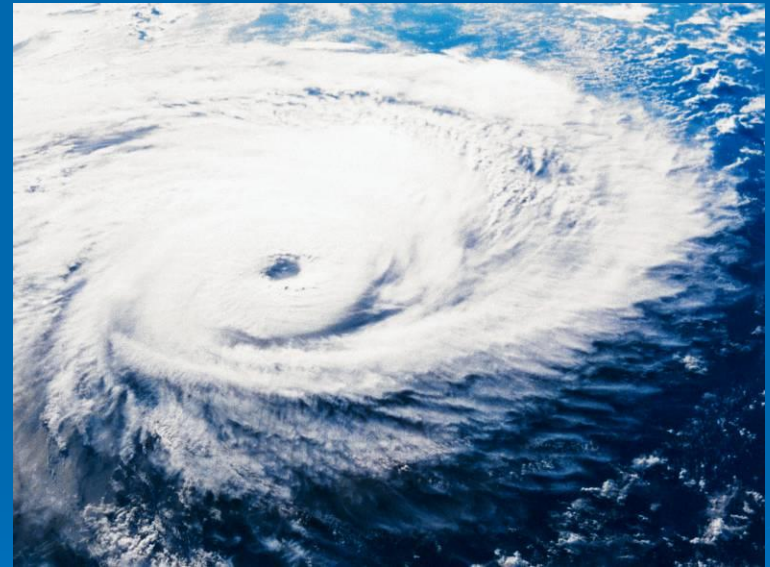
- Flooding is common in the county
- Approximately 2,500 homes and over 400 businesses are located in flood prone areas
- Flooding has caused several deaths recently
- High vulnerability





# Hurricane, Tropical Storm, and Northeasters

- Major storm systems
- Associated with major flooding and wind damage events
- Storm tracks are often more coastal but rain impact can be more extreme inland



# Winter Storms

- A variety of winter storms have struck the county in the past
- 1995- 2011 150 winter storm and ice events
- Can cause disruption of utilities and services
- Moderate vulnerability



# Utility Interruption

- PUC measures reliability
- Disruption from natural events and equipment failure
- Low to medium vulnerability



# Extreme Temperature

- Heat and cold temperature extremes
- 140 extreme heat events and 65 extreme cold events in past 60 years
- Low to moderate vulnerability



# Transportation Accident

- Includes highway, train and aviation
- 609,000 licensed drivers and various commuters
- 5 airports
- 3 major rail operators



# Lightning

- 41 major lightning events in the county since 1950
- Can cause fires and utility disruption
- Low vulnerability



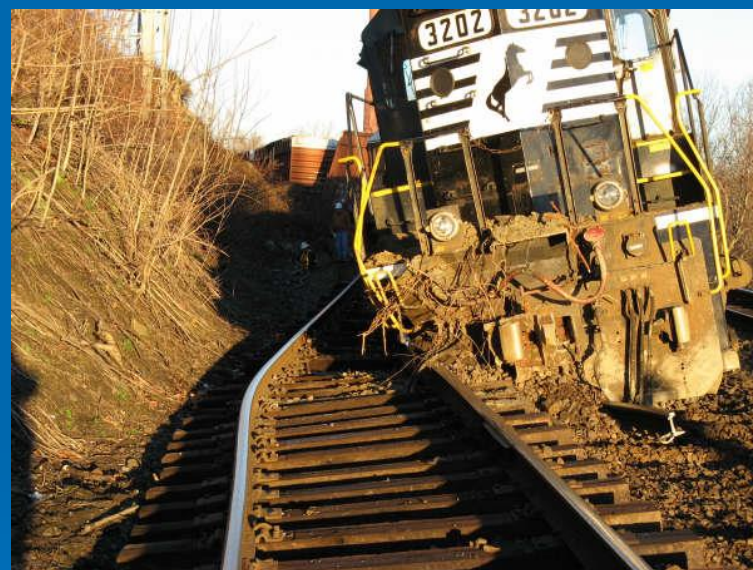
# Radiological Release Incidents

- Limerick Nuclear Power Station
- Radioactive material at various medical and research facilities
- Very low probability of events, but dramatic damage potential



# Landslide

- Includes various types of soil and rock movement
- Very few areas in the county have extreme slopes subject to landslides
- Can be dangerous when impacts highway or railroads



# Subsidence

- Sinkholes have formed in several locations in Upper Merion, Whitemarsh and Plymouth Townships Less than 5% of the county is in sinkhole prone areas
- Moderate vulnerability in a few municipalities



# Drought

- 6 drought emergencies in the county over the last 21 years
- Droughts impact the entire county for extended periods of time
- Low vulnerability county wide; Moderate vulnerability in some municipalities



# Severe Wind

- Severe wind conditions have occurred 37 times since 1950
- 15 tornadoes in the county since 1950
- Primary damage due to fallen trees and downed power lines
- Moderate vulnerability

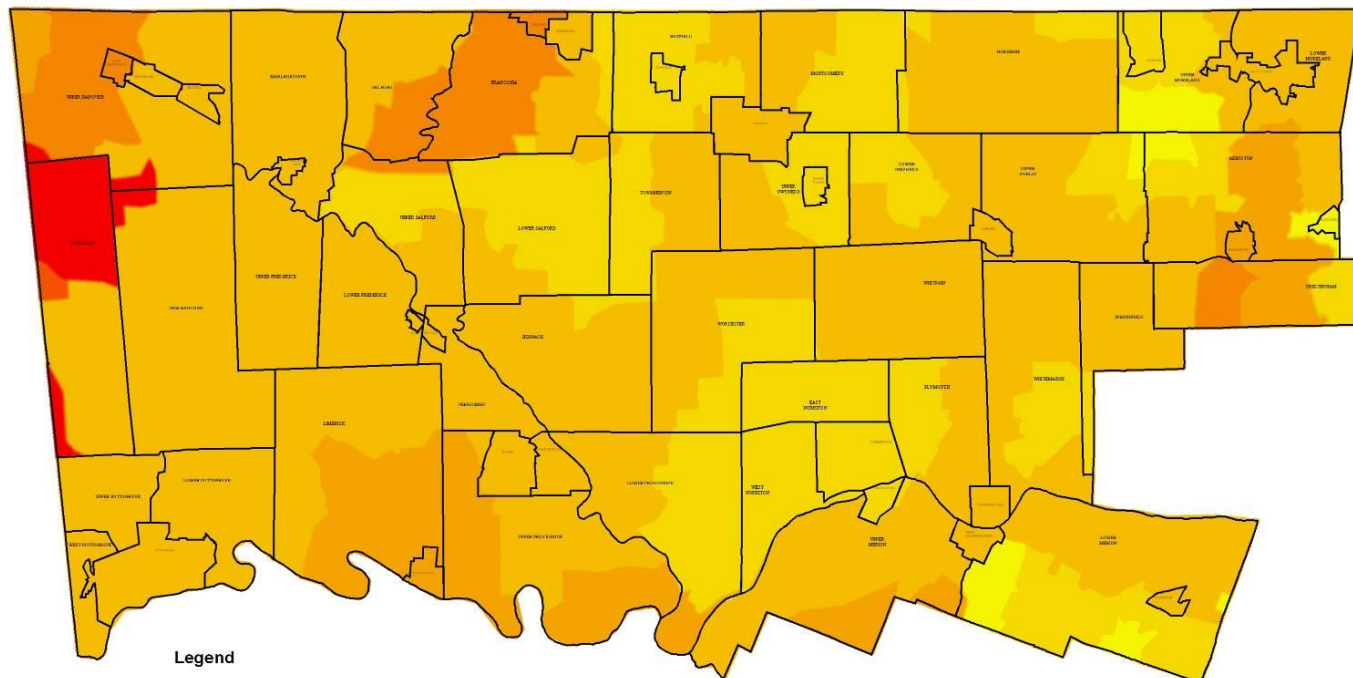


# Radon

- Relatively common throughout the county
- Long term impact
- Moderate vulnerability



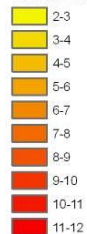
## Montgomery County Average Radon Levels by Zip Code Area



### Legend

### Average Radon Levels by Zip Code

Radon Level



# MCPC

Montgomery  
County  
Planning  
Commission

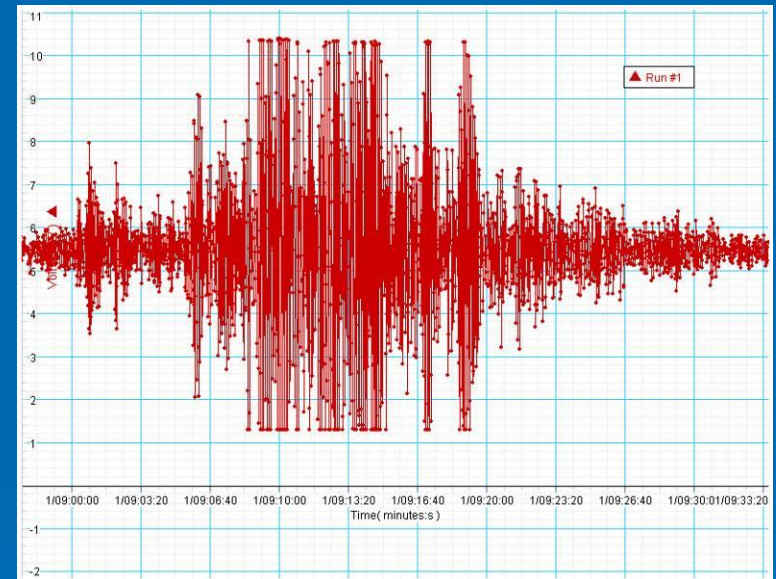
Montgomery County Courthouse - Planning Commission  
PO Box 311 Norristown PA 19404-0311  
(p) 610.278.3722 (f) 610.278.3941  
[www.montcopa.org/plancom](http://www.montcopa.org/plancom)

This map is based on 2000 ortho photography and official sources. Property lines were compiled from individual block maps from the Montgomery County Board of Assessment Appeals, with no verification from the deed. This map is not meant to be used as a legal definition of properties or for engineering purposes.



# Earthquakes

- 35 earthquakes caused damage in PA throughout history.
- No earthquakes above 6 Richter Scale in Montgomery
- Montgomery County is in a moderate earthquake zone.



# Wild Fire

- 47 fires consuming 30 acres in the county over past 40 years
- Currently wild fire is a big concern
- Farmland, vacant and woodland is about one-third of the county
- Low vulnerability



# Hail

- 61 hail storms in the county since 1950
- Building and crop damage
- Localized events
- Low vulnerability



# Building/ Structure Collapse

- Significant in areas with high vacancy and orphan properties
- Collapse could impact adjoining properties, roads and sidewalks



# Civil Disturbance

- Minor events in the past
- Few vulnerable locations for protest events
- Overall low vulnerability



# Dam Failure

- Over 50 dams
- 22 significant dams impacting the county
- Impact is localized and defined in EAPs
- Low vulnerability



# Cyber Security Disruption

- Various types of disruption to internet and users
- Business and high security systems are the most vulnerable
- Low overall vulnerability



# Environmental Hazard

- Various types of Environmental Hazards
- Approx. 300 Sara III sites in the county
- History of pipeline leaks and explosions
- Moderate vulnerability



# Levee Failure

- Two very small levee systems in the county
- Low vulnerability



# Terrorist Attack

- Potential targets include government facilities, large gathering spots and symbolic locations
- Activities involve bomb, kidnappings, cyber attacks, and use of chemical, radioactive, or biological materials
- Not as vulnerable as other locations in PA



# Urban Fire and Explosion

- Over 20,000 fire calls annually
- Age and density of development are key factors
- Low to moderate vulnerability



# Mitigation Strategy

- Goals and Objectives
- Strategic Mitigation Actions
- Overall Mitigation Measures
  - County-wide program
  - Additional vulnerability analysis
- Potential Mitigation Projects

# Potential Mitigation Projects

- Goal 1: Develop a better understanding of potential disasters that could occur in the county
  - Outreach and training
  - Various database and GIS products
  - Monitoring environment
  - Improve reporting and record keeping
  - Better communication through Knowledge Center

# Potential Mitigation Projects

- Goal 2: Ensure that the public understands potential hazards and is aware of which actions to be taken to minimize their risks
  - Internet and social media outlets
  - Signage and warning systems
  - Commuter education
  - Emergency response planning
  - Investigate new warning technology
  - General education for the public

# Potential Mitigation Projects

- Goal 3: Significantly reduce the risk of loss of life, injuries, economic costs and destruction of natural and cultural resources that result from all hazards
  - Code officer training
  - Coordination with utilities
  - Ensure maintenance of emergency action plans for dams
  - Continue to provide first responder training
  - Inventory county property for hazard vulnerability
  - Develop emergency preplans for high haz facilities

# Potential Mitigation Projects

## ➤ Goal 3 Cont':

- Shade tree controls
- Extreme temperature warnings
- Limerick Power Plant evacuation plans
- Household hazardous waste collection
- Land use planning to reduce hazards
- Continue SE PA Regional Task Force involvement

# Potential Mitigation Projects

- Goal 4: Encourage and promote actions to minimize the impact of floods within the county
  - Buyouts of frequent flooded property structures
  - Elevation of flood prone structures
  - Develop control basin structures
  - Schuylkill River flood stage warning
  - Stream system management
  - Stormwater basin effectiveness study
  - Stream corridor preservation
  - Complete stormwater management plans

# Potential Mitigation Projects

## ➤ Goal 4 Cont':

- Flood reduction through road improvements
- Develop safe flood routes and uniform road closure systems
- Complete new flood maps and update municipal flood plain ordinances
- Work with Temple Univ. and other partners to study critical flooded areas
- Make various drainage system improvements
- Develop incentives to remove flood prone structures

# Changes in the County



# Since the last Plan

- Bakken Crude Transport
- Landslides
- Extension of Limerick Power Plant License
- New Pa Penitentiary
- Closure of Willow Grove Naval Air Station
- County Debris Management Plan prepared

# Since the Last Plan (con't)

- FIRM Map modernization update
- All municipal flood plain ordinances revised
- Several highway projects and bridge replacements
- Several hazard mitigation projects completed
- Completion of flood control dams in Upper Dublin

# Next Steps

- Form a study committee (Fall 2016)
- Schedule public meeting workshop (Winter 2016/2017)
- Mail out vulnerability and issues survey to all municipalities (Fall 2016)
- Various workshops and targeted fact finding meetings (Winter 2016/ 2017)